

noon of that date. The forecast issued at that time covered a period of two days, and additional forecasts were issued the following night and morning and broadcast by radio station KYW.

Advices during the month were wired to the California Fruit Growers' Exchange, Los Angeles, Calif., in advance of the development of heat waves in the Chicago forecast district, in order to guide the exchange in the shipping of fruit to this area.

Fire-weather forecasts were resumed for the State and National forests in Minnesota on July 28.

Special flying forecasts were furnished the national air tour for all the points in and bordering on the Chicago forecast district at which these planes stopped. The tour started from Detroit June 27 and returned July 12. The forecasts, as indicated by a number of the flyers, proved highly satisfactory.—*H. J. Cox.*

NEW ORLEANS FORECAST DISTRICT

Moderate weather conditions prevailed generally during July. No warnings were issued for the west Gulf coast and no general storm occurred.—*I. M. Cline.*

DENVER FORECAST DISTRICT

Frequent disturbances of moderate intensity which advanced eastward from the Rocky Mountain Plateau were attended by the usual summer showers and thunderstorms, especially in the central and northern portions of the district, with an excess of rainfall in Colorado, southeastern Wyoming, and north-central Montana. A marked deficiency in precipitation occurred in most of New Mexico and central and eastern Arizona. While it was cooler than normal over nearly all of the northern portion of the eastern Rocky Mountain slope, the month was generally considerably warmer than the average west of the Continental Divide and in New Mexico.

With the exception of forecasts on the 9th of fresh to brisk westerly winds, and on the 25th of brisk to strong westerly winds, both of which were included in the morning predictions of those dates for Wyoming, no special forecasts or warnings were issued and none was required.—*J. M. Sherier.*

SAN FRANCISCO FORECAST DISTRICT

The more important forecasts and warnings related to the fire-weather situation and to the Smith-Bronte airplane flight. The latter took place on the 14th and 15th of the month and required the issuance of special bulletins on the 14th and on several preceding dates descriptive of weather conditions between the mainland and the islands. Careful attention was paid to these advices by the aviators, especially Mr. Bronte, who was in close touch with the Weather Bureau office at San Francisco for a week before the flight. The bulletins were quite successful and received due acknowledgment from the flyers after the completion of their journey, who testified that their chief dependence was on "dead reckoning." Aside from two sextant observations which gave them some idea of their longitude on the morning of the 15th, they were unable to determine their position from celestial observations, and had they not followed a well-conceived compass course and made very accurate allowance for "drift" their adventure might have ended disastrously. This fact earned their appreciation of the weather bulletins from which alone they derived their drift calculations.

It appears that they were exactly on their course until very near the island of Oahu, when, in doubt as to their latitude and fearful of passing the entire archipelago to the north, they departed from their course, turned southward, and crashed on the island of Molokai. Had they continued straight on, instead of turning to the south, they would have landed safely at Wheeler Field, their objective.

The fire situation in the forests grew slowly but steadily more dangerous, but conditions were not acute over the northern parts of the district until the 22d, when a fragment of the North Pacific high pressure system moved inland, bringing excessively high temperatures and low humidities to Oregon and Washington. This situation was anticipated in warnings issued the day before. Others, similar in type, arising in the North Pacific States, called for like bulletins on the 27th and 31st. Warnings of danger from lightning storms were sent to various California forests on 13 occasions, and the attempt at localization achieved some degree of success. On one occasion, viz, the 28th, more than 100 fires were started by lightning in the Klamath, Trinity, Shasta, and Lassen national forests within 48 hours after issuance of the predictions. Thunderstorm warnings were also incorporated on numerous occasions in the State forecasts for Washington, Oregon, Idaho, and Nevada.—*Thomas R. Reed.*

RIVERS AND FLOODS

By R. E. SPENCER

The great flood in the Mississippi River finally terminated on July 14, 1927, with the falling of the water below flood stage at Baton Rouge, La.; and by the end of the month the entire lower river was well within the bankful stage. As noted in the special flood bulletin of the New Orleans Weather Bureau office of August 1, 1927, however, considerable areas of swamp bottoms and between 30,000 and 35,000 acres of agricultural land were still inundated. As the recession of water from these areas will depend almost wholly upon absorption and evaporation, it will of course take place very slowly.

The annual rise in the Columbia River, report on which was deferred from the June issue of this REVIEW, occurred substantially as predicted in the Portland, Oreg., snowfall bulletin of April, 1927. It was stated in that bulletin that owing to the snowfall excess in the Columbia drainage basin the crest of the rise would, with the prevalence of normal temperature, be later than and above the average. Relatively cool weather prevailed well into June, and the date of the crest at Portland was 9 days later and 2.9 feet higher than the average. Warnings of the approach of the flood received wide and effective distribution, so that practically no movable property was lost, farmers generally refrained from planting lands that were likely to be flooded, and suspension of business was reduced to a minimum. Incomplete reports of losses due to this flood give the following figures:

Tangible property.....	\$17, 041
Matured crops.....	33, 125
Prospective crops.....	80, 600
Livestock and other movable property.....	500
Suspension of business.....	109, 900
	<hr/> 241, 166

Property valued at \$152,650 was reported saved by the warnings; but the official in charge of the Weather Bureau office at Portland reports that "probably the greatest benefit of the river service this year was in preventing